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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 10/26/2005

STEVEN W. ROTH
IBM CORPORATION
3605 HIGHWAY 52 NORTH
DEPARTMENT 917
ROCHESTER, MN 55901-7829

EXAMINER

PEZZLO, JOHN

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 10/26/2005

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/173,090 | 10/15/1998 | TIMOTHY ROY BLOCK | RO998-088 | 1258 |

TITLE OF INVENTION: CLUSTER DESTINATION ADDRESS TABLE - IP ROUTING FOR CLUSTERS

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE | PUBLICATION FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|-----------|-----------------|------------------|------------|
| nonprovisional | NO | \$1400 | \$0 | \$1400 | 01/26/2006 |

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

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- B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

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II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: MailMail Stop ISSUE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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7590

10/26/2005

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

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| (Depositor's name) |
| (Signature) |
| (Date) |

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| nonprovisional | NO | \$1400 | \$0 | \$1400 | 01/26/2006 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|--------------|----------|----------------|
| PEZZLO, JOHN | 2662 | 370-401000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

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2 _____
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PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

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☐ Payment by credit card. Form PTO-2038 is attached.
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5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

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EXAMINER

PEZZLO, JOHN

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| ART UNIT | PAPER NUMBER |
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2662

DATE MAILED: 10/26/2005

Determination of Patent Term Extension under 35 U.S.C. 154 (b) (application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 0 day(s). Any patent to issue from the above-identified application will include an indication of the 0 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability

Application No.

09/173,090

Examiner

John Pezzlo

Applicant(s)

BLOCK ET AL.

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to BoA decision 9/15/05.
2. ☒ The allowed claim(s) is/are 1-63.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


JOHN PEZZLO
PRIMARY EXAMINER

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven W. Roth on 19 October 2005.

The claims have been amended as follows:

1. Claims 37, 45, and 54 line 1, between "product" and "comprising" inserted -- stored on a computer readable medium that stores the computer code --.

Allowable Subject Matter

Claims 1-63 are allowable over the prior art of record.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Applicants have claimed the following uniquely distinct features in the instant invention which are not found in the prior art, either singularly or in combination.

1. Regarding claim 1 - An apparatus comprising: at least one processor, a memory coupled to at least one processor, a cluster servicer residing in said memory, said cluster servicer facilitating cluster messaging with at least one other computer without requiring an intervening dedicated local area network to said at least one other apparatus.

2. Regarding claim 7 - An apparatus comprising: at least one processor, a memory coupled to at least one processor, a network message servicer residing in said memory, and a cluster servicer residing in said memory, said cluster servicer including a cluster destination address table, said cluster destination address table including at least one address for at least one other apparatus networked to said apparatus, wherein a message to one of said at least one other apparatus can be sent by said cluster servicer retrieving said at least one address for said at least one other apparatus from said cluster destination address table and passing said retrieved address and said message to said network servicer, wherein said network servicer routes said message to said at least one other apparatus.

3. Regarding claim 14 - A cluster of computers, each computer in said cluster of computers comprising: at least one processor, at least one network adapter, a memory coupled to said at least one processor, a User Datagram Protocol residing in said memory, said User Datagram Protocol formatting at least one packet to be sent between computers in said cluster of computers, an Internet Protocol suite residing in said memory, said Internet Protocol routing said at least one packet between computers in said cluster of computers, and a cluster servicer

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residing in said memory, said cluster servicer including a cluster destination address table, said cluster destination address table including a cluster destination address table entry for each computer in said cluster of computers, said each cluster destination address table entry comprising: an Internet address for each of said at least one network adapter, status information for each of said at least one network adapter, and adapter information for each of said at least one network adapter, wherein said cluster servicer sends a cluster message to a destination computer in said cluster of computers by determining an Internet address for said destination computer from said cluster destination address table entry for said destination computer and passing said determined Internet address of said destination computer and said cluster message to said User Datagram Protocol, wherein said User Datagram Protocol formats said determined Internet address and said cluster message into a packet and passes said packet to said Internet Protocol, wherein said Internet Protocol routes said packet to said destination computer.

4. Regarding claim 22 - A method comprising the steps of: creating network address information for each computer in a cluster configuration, storing said network address information on said each computer in said cluster configuration, and employing said network address information in conjunction with a network message servicer for cluster communications in said cluster configuration beyond a single local area network.

5. Regarding claim 31 - A method of communicating between computers in a cluster comprising the steps of: creating a cluster destination address table on said each computer in said cluster, said cluster destination address table including a cluster destination address table entry for said each computer in said cluster, said cluster destination address table entry including a primary network address and at least one alternate network address for said computer in said

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cluster corresponding to said cluster destination address table entry, storing said cluster destination address table on said each computer in said cluster, and employing said cluster destination address table in conjunction with a network message servicer for communicating between computers in said cluster without requiring an intervening dedicated local area network.

6. Regarding claim 37 - A program product stored on a computer readable medium that stores the computer code comprising: (A) a cluster servicer, said cluster servicer facilitating cluster messaging with at least one other computer without requiring an intervening dedicated local area network to said at least one other computer, and (B) signal bearing media bearing said cluster servicer.

7. Regarding claim 45 - A program product stored on a computer readable medium that stores the computer code comprising: (A) a network message servicer, (B) a cluster servicer, said cluster servicer including a cluster destination address table, said cluster destination address table including at least one address for each of a plurality of apparatuses in a computer cluster, wherein a message to one of said plurality of apparatuses can be sent by said cluster servicer retrieving one of said at least one address for said one of said plurality of apparatuses from said cluster destination address table and passing said retrieved address and said message to said network servicer, wherein said network servicer routes said message to said one of said plurality of apparatuses, and (C) signal bearing media bearing said network message servicer and said cluster servicer.

8. Regarding claim 54 - A program product stored on a computer readable medium that stores the computer code comprising: a User Datagram Protocol, said User Datagram Protocol formatting at least one packet to be sent between computers in a cluster of computers, an Internet

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Protocol suite, said Internet Protocol routing said at least one packet between computers in said cluster of computers, and a cluster servicer, said cluster servicer including a cluster destination address table, said cluster destination address table including a cluster destination address table entry for each computer in said cluster of computers, said each cluster destination address table entry comprising: an Internet address for each network adapter, status information for said each network adapter, and adapter information for said each network adapter, wherein said cluster servicer sends a cluster message to a destination computer in said cluster of computers by determining an Internet address for said destination computer from said cluster destination address table entry for said destination computer and passing said determined Internet address of said destination computer and said cluster message to said User Datagram Protocol, wherein said User Datagram Protocol formats said determined Internet address and said cluster message into a packet and passes said packet to said Internet Protocol, wherein said Internet Protocol routes said packet to said destination computer.

The closest prior art, either singularly or in combination, fail to anticipate or render the above limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

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Claims 1-63 being allowable, **Prosecution On The Merits Is Closed** in this application.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Jordan et al. (US 6,438,652 B1) discloses a load balancing cooperating cache servers by shifting forwarded request.
2. Edmonds et al. (US 6,412,079 B1) discloses server pool for clustered system.
3. Goldszmidt et al. (US 6,195,680 B1) discloses a client-based dynamic switching of streaming servers for fault-tolerance and load balancing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pezzlo whose telephone number is (571) 272-3090. The examiner can normally be reached on Monday to Friday from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C.

or faxed to:

Application/Control Number: 09/173,090
Art Unit: 2662

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(571) 273-8300

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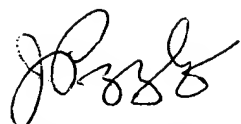
2A15

500 Dulany Street

Alexandria, VA, 22313.

John Pezzlo

18 October 2005



JOHN PEZZLO
PRIMARY EXAMINER